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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/250,400	02/16/1999	MASATAKA YAMASHITA	35.C13319	2017

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EXAMINER

RAMSEY, KENNETH J

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 03/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicant N .

09/250,400

Applicant(s)

YAMASHITA ET AL.

Examiner

Kenneth J. Ramsey

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-34, 36-38 and 40-47 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) all pending claims is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____ |

Indefiniteness

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 31 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not understood what is meant by the last clause, is applicant referring to the collection and storage of the gas after the completion of the process or to the sealing of the gas in the reaction chamber?

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 31 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The examiner can find no reference to the storing of the reaction gas except in the original gas containers from which the gas is supplied. Thus it is erroneous and new matter to state that the gas is stored after the start of the energizing because the gas has been stored all along according to the original description.

Prior Art Rejections

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-6, 7, 8, 11-17, 20-24, 27-29, 31, 33, 34, 36-38, 40, 41 and 44-47 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kawade et al (US 6,034,478 or JP 09-298029) in view of Banno et al (JP 64-19658). Column 11, line 32 through column 12, line 41 (JP Paragraph [0086] through paragraph [0090]) discloses energization forming an electroconductive film in an atmosphere comprising a gas that promotes the cohesion of the electroconductive film while heating the film by resistance. The cohesion promoting gas atmosphere comprises H₂, CO or methane. The electron-emitting devices so formed are provided as an electron source of an image forming device (figure 8). It is not disclosed that the electroconductive film is preheated between 50°C and 150°C prior to energizing forming. However, the examiner maintains that it would have been obvious for one of ordinary skill in the art to preheat the substrate of Kawade et al prior to energization forming because it was known in the art at the time of applicants' invention that energization forming without preheating causes cracking of the substrate. Thus as taught by Banno et al, translation, page 3, line 6 through page 5, line 9, it would have been known to one of ordinary skill in the art that the process of Kawade is desirably carried out after first preheating the substrate to avoid cracking due to thermal shock. That applicants find that that preheating has certain other advantages does not show unobviousness of the combination of Banno et al with Kawade because the process of Kawade et al would produce undesirable cracking of the substrate if there were no preheating of the substrate. Of course, one of

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ordinary skill would not carry out the step of preheating to such a degree that the process becomes unstable. Also, one of ordinary skill would want to balance the costs of heating with the costs of process time along with the possible spoilage of the product. Such considerations are routinely investigated prior to finalization of the process parameters. Generally, "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%). Thus, although Banno does not specify the preheat temperature, the determination of the optimum amount of preheating required to avoid cracking of the substrate and to obtain satisfactory results would have involve routine shop practice. As to claims 11 and 12, a palladium oxide film is formed by Kawade et al, at column 25, lines 1-8 or the above cited portion of the JP disclosure. As to claims 31 and 33, it would have been obvious to one of ordinary skill in the art to store the working gas in order to recycle the same.

7. Claims 9-12, 25, 26, 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawade et al and Banno et al, as above taken with respect to claim 7, in view of Talko et al (EP patent 769,796). To form the palladium oxide film of Kawade et al by the ink jet droplet method of Talko et al, column 32, lines 30-41, would

have been obvious to one of ordinary skill in the art since accurate placement of the film is possible.

8. Claims 1-8, 11-24, 27-41 and 44-46 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kawade et al (US 6,034,478 or JP 09-298029) and Banno et al (JP 64-19658) as applied to claim 7 above, further in view of Ueno et al (JP 6-12997). Ueno et al, paragraph [0185] discloses that using a flowing reducing atmosphere of H₂ gas of [5] SCCM in a vacuum, energization time can be reduced from one minute to 100 msec. Also, Ueno et al, paragraphs [0193] – [0194] taught that low concentrations of hydrogen in the gas allowed the forming to be conducted without the cracking that occurred in the prior art and with excellent reproducibility. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to have employed a flowing reducing gas in the process of Kawade et al as above taken with Banno et al. Since used of a flowing reducing gas prior to energization would be a waste of gas, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to delay the application of the H₂ until the electroconductive film was heated by preheating and/or energization in order to make the most practicable use of the gas. The determination of the appropriate temperature for conducting the process would have been obvious to one of ordinary skill in view of the combined teachings of the references.

9. Claims 9-12, 25, 26, 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawade et al, Banno et al and Ueno et al, as above taken with respect to claim 7, in view of Talko et al (EP patent 769,796). To form the palladium

oxide film of Kawade et al by the ink jet droplet method of Talko et al, column 32, lines 30-41, would have been obvious to one of ordinary skill in the art since accurate placement of the film is possible

Response to Applicants Arguments

10. Applicants argue that the temperature of processing is critical because the degree of reaction may be too fast to obtain reproducible results or too slow to be cost effective. However, it is believed that Uneo et al gave due consideration to these factors since they obtained reproducible results in short period of time compared to prior art processes.

11. Because Uneo et al used a very dilute hydrogen-nitrogen mixture, it is reasonable to presume that some heating was required to speed the process as well as to prevent cracking of the substrate in accordance with Banno et al. Page 14, last line of applicants' remarks is believed to contain a typographical error. Per page 15, lines 1 to 8, the higher temperature shortened the time for the reaction to take place as would have been expected contrary to the applicants' remarks. Therefore, it would have been obvious to preheat the substrate of Kawade et al in accordance with the teachings of Banno et al and Uneo et al.

12. Applicants arguments that Uneo et al and Banno et al are not concerned with the problems faced by Kawade et al are clearly incorrect. The references are directly concerned with the process of Kawade et al and would have been considered by one of ordinary skill in the art in an attempt to obtain satisfactory results.

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Action Made Final

1. Applicants' amendments to the claims necessitated the new grounds of rejection herein. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Directions for Responses

Any formal response to this communication should be directed to examiner Kenneth Ramsey, Art Unit 2879, and either
faxed to: 703-872-9319; or mailed to: Box AF
Assistant Commissioner For Patents
Washington, D.C. 20231

Technical inquiries concerning this communication should be directed to Kenneth J. Ramsey, (703) 308-2324 (voice), (703) 746-4832 (fax).

Kenneth J. Ramsey
Primary Examiner
Art Unit 2879

